WESTERN AUSTRALIA POLICE FORCE
ISSUED BY THE COMMISSIONER OF POLICE

AIDS TO SURVIVAL

I am pleased to recommend this booklet to those who wish to enhance their safety as they travel throughout the vast state of Western Australia.

Clearly the invaluable information, explained in commonsense terms, could mean the difference between life and death to any person who has the misfortune to be stranded in an adverse geographic environment.

The joint efforts of members of the Western Australia Police Academy Duke of Edinburgh Award Training Team; the SABRE Training Academy Pty Ltd; the personal input of Doctor K.R. Harvey, M.B.B.S., D. Obst, R.C.O.G.; Mr P. Bindon, W.A. Museum; and my police officers Sergeant A.E. O'Meagher and Constable D. Reid; are to be commended.

Aids to Survival is already an acknowledged instructional handbook. The reprint of this fourth edition demonstrates its continuing popularity.

B.B.M.

B. BULL
COMMISSIONER OF POLICE

July 18, 1986

AIDS TO SURVIVAL

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AIDS TO SURVIVAL

1. INTRODUCTION

HOW WOULD YOU FARE IN A SURVIVAL SITUATION?

The chance of the average individual in Western Australia being lost or stranded is remote. However, every year some persons find themselves in situations where they have to battle the elements and act like the Aboriginal nomad in order to survive.

For some, who are fitter than most and having sufficient strength of purpose and the propensity for making use of poor water and harsh survival foods, the task will be a lot easier. The majority of the general public unfortunately are not gifted in this way.

2. SURVIVAL

The first rule of survival is DON'T PANIC. You must sit down and take stock of your situation.

The word "survival" is an aid to what you should do.

S Size up the situation.

U Undue haste makes waste.

R Remember where you are.

V Vanquish fear and panic.

I Improvise.

V Value living.

A Act like the natives.

L Lean on your basic skills.

Questions you should ask yourself are:

(1) How much water do I have?

(2) How much food do I have?

(3) What water/food is in the area?

(4) What protection from the elements do I need?

3. BASIC REQUIREMENTS

You will need four basic requirements to survive, they are:

(1) WATER.

(2) SHELTER.

(3) WARMTH.

(4) FOOD.

In general the priorities will be as listed, however, in some situations you may alter these to suit, i.e. in the desert SHELTER may become number one priority if sufficient water is available.

If you have taken the precaution of notifying someone of where you are going and how long you intend to stay, a search will no doubt be conducted to look for you. Your task will be to use the information in this booklet to try to provide for yourself the four basic requirements and sustain life until you are found.

4. PRIOR PREPARATION AND PLANNING

Adequate preparation before undertaking a journey will lessen the chance of jeopardising human life. There have been too many cases where loss of life has resulted from a lack of foresight into the problems involved.

There are a number of things to be considered before starting to pack for your trip, these are:

Equipment Required

The equipment you are taking must be serviceable and sufficient for the trip, allow additional equipment if in doubt. Maps should cover the entire area of the trip. Communications equipment must be tested.

Terrain to be Covered

A map study should be done to ascertain the following:

(1) Is it accessible by vehicle or by foot?

(2) Where are the fuel and water sources en route?

(3) What is the best route?

(4) What aids to navigation will you have?

(5) What alternate route could you use if necessary?

(6) What positions of evacuation are available?

(7) Where are the local inhabitants?

Always Use a Map

The Australian bush is very monotonous with very few landmarks and a lack of signposts on outback roads. Be careful of spoken directions as they can be misinterpreted and the wrong track easily taken. In the absence of an official map, try to obtain a rough map drawn on paper with as many landmarks as possible indicated showing the necessary distances.

Mark your position on the map as you proceed so you can pin-point your location at any given time; confirm your position at every opportunity.

Weather Conditions

The weather must be considered as many road conditions vary according to the local rainfall. You should be aware of the changes of season in the area of your trip, this will ensure that you are going at the best time of year.

What will the temperature range be? The phases of the moon may be important to you as this will affect the tides which may be flooding creeks, etc.

Time and Space

You should consider carefully the time and space you are allowing for your trip.

(1) When are you leaving?

(2) How long will it take?

(3) Where do you propose stopping to camp?

(4) When will you arrive?

(5) Allow a safety margin in case of minor mishaps.

Learn About the Country

You should learn as much about the country you are to travel as possible, this will assist you if you have to survive in it. Things to study would be:

- Native Foods:
  - . Animals.
  - . Fishing places.
  - . Edible plants.
- Water Sources:
  - . Creeks and rivers.
  - . Vegetation.
  - . Rainfall.
- Local Problems:
  - . Insects, flies and mosquitoes.
  - . Prickle bush, etc.
  - . Caves, mines, holes and other dangers.
  - . Diseases to guard against.

Notification

Before leaving on a journey through remote areas, notify either friends, relatives, station owners or police of your -

(1) estimated time of departure (E.T.D.);

(2) estimated time of arrival (E.T.A.);

(3) proposed and alternate routes.

DON'T FORGET TO NOTIFY THOSE CONCERNED ONCE YOU HAVE SAFELY COMPLETED THE JOURNEY.

Before Leaving

Vehicle Reliability: Ensure that the vehicle you will be travelling in is reliable and roadworthy in every respect. If you are unable to ascertain this yourself, have the vehicle examined at a reliable garage or service station.

Rough roads and collisions with animals are common occurrences on country roads, so give serious thought to having a sumpguard and a kangaroo bar fitted.

Loading: Do not overload your vehicle. If extra fuel and water are carried, ensure that the fuel containers do not leak, nor are they stored above the exhaust outlet as this could create a fire danger. Plastic containers should be avoided to store fuel where possible as inferior plastics are affected by heat and are easily fractured with rough handling.

Spare Parts: Carry essential tools and spare parts for the vehicle, including a tow rope. Parts should at least include a fan belt, radiator hoses, ignition points, spark plugs, extra spare tyre or puncture repair outfit with tyre levers. Some motorists carry much more than this as the parts take up relatively little room in the vehicle.

Supplies: Enough spare food, water and blankets should be included to allow for any unforeseen delays. Emergency rations should last at least three days and the food should not be of a perishable nature. Allow one gallon of water for each person per day.

Accidents: Physical fitness, protective clothing and headgear is essential before undertaking any long journey, particularly in the case of bushwalks and hikes. There have been many tragedies and near tragedies when inexperienced organisers have subjected young people to extremely exhausting and ill-equipped expeditions; death resulting from accidents, exhaustion and exposure have followed.

It must be remembered that rescue operations are very costly and many people are inconvenienced in more ways than one.

By following the directions outlined above, it may be possible to avoid the emergencies that would otherwise occur.

5. WATER

In Western Australia every year one reads of individuals who die due to dehydration as a result of becoming lost or breaking down. This is because of the remote and arid country we live in. Many of these deaths occur because the individual did not carry out good survival techniques.

The average person can expect to survive without water for three to five days (depending on the climate and what you try to do). Some instances show individuals have perished within hours of becoming lost.

You must conserve any water you have, including that already in your body. Water is only required to replace fluid which is lost, so by conserving fluid loss you require less water.

Fluid Loss

Fluid is lost from the body by -

(1) perspiring or sweating;

(2) breathing;

(3) urinating;

(4) vomiting;

(5) crying;

(6) talking.

PERSPIRATION is a normal bodily process which has a cooling effect as the moisture evaporates from the skin surface. A man sitting in the shade when the temperature is 35^{o}C would lose about two litres of fluid in a twenty-four hour period. The aim should be to keep your body temperature down to a minimum either by natural or artificial means. It is important to keep activity down to a minimum and conserve existing body fluids.

URINATING is also a normal bodily process and cannot be prevented. However, it should be held as long as possible to slow down this fluid loss from the body. On no account drink urine unless it has been distilled, but you could perhaps apply it to the skin surface with a sponge, in the hope that it will reduce your body temperature through evaporation.

VOMITING can be avoided by leaving bad or harmful food well alone. It is better to go hungry than to risk sickness.

CRYING should also be avoided for obvious reasons, but it may be difficult to convince a child of this.

Available water should only be consumed before sunrise and after sunset and never during the heat of the day, drinking only enough to maintain reasonable health. Sucking stones is not recommended as it encourages excessive secretion of saliva.

Do not drink salt water. Dirty water should only be drunk after it has been boiled and strained through a piece of rag. Remember that even a slight infection or sickness in a survival situation could be fatal.

Water Procurement

Your first efforts should be directed towards establishing a good water supply. Initially you should look for ground water using the following methods.

CREEK BEDS are easily discernible in dry areas because of the relatively green vegetation and taller trees following the course of the creek. Unless there has been recent rain in the area the creek bed will probably be quite dry. You may be lucky enough to locate damp sand or mud at the bends of the creek or by digging in the creek bed at a likely spot. Water can be extracted from the damp sand or mud by soaking a rag in soil and wringing out the water into a container. The exposed tree roots in the creek bed can be cut in lengths and drained of their fluid early in the morning (see headings "Certain Trees" and "The Desert Still"). Any surface water must be boiled if muddy or tainted to reduce the risk of infection.

Where to dig in dry river beds.

Rock Formations

If there is any water seepage from the ground, it is usually to be found near rock formations, where the country is rugged and undulating. It may also be found in some obviously dry areas. Rocky areas are also ideal for rain catchment. Rain soaks very quickly into the soil, whereas it can lay in pools on a rocky surface for as long as two weeks.

Salt lakes: After rain has fallen the top 4 mm of a salt lake is fresh water. It can be siphoned off by using a grass straw.

Windmills

Windmills have been erected in most farming and station country throughout the State at such locations as wells, dams and soaks. These can be seen from a long distance and usually have animal tracks leading to them. Check to see that the water at these mills has not gone salty.

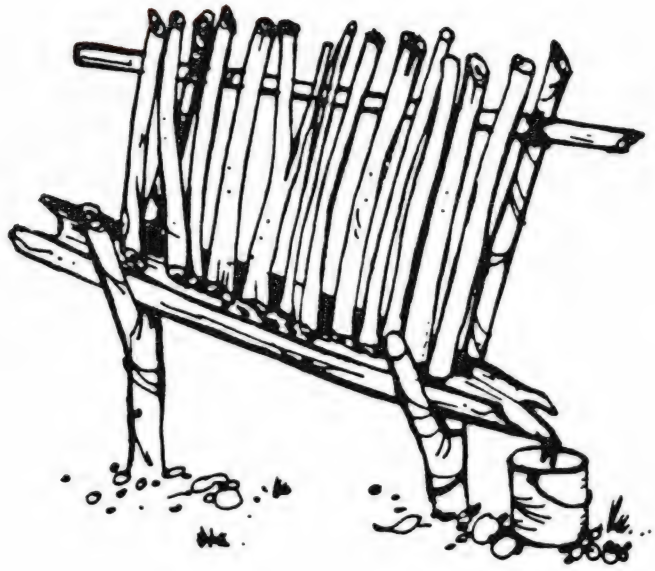
Animal Trails

Animals need water the same as humans do and they will travel miles to it regularly each day leaving marked trails through scrub, heading to a water source. Where a large number of trails converge together, it would indicate that the water was not far distant.

Water seepage: Natural springs and soft rock erosion areas (slopes, banks, etc.).

Certain Trees

In the early morning before the heat of the day, the roots from certain trees such as the boab, kurrajong, wattle, some gums and others, can be cut into short lengths, stood end on with their thickest ends down in a container and the fluid allowed to drain out. Avoid fluid that tastes bitter. For obvious reasons it is best to use roots that are easily obtained with a minimum of effort and the ideal location for this is in creek beds and washouts where parts of the roots are already exposed or near the surface, also in some crevices of trees and water blisters in the paperbark tree.



Water from tree roots.

Coastal Water Sources

Sea water can only be consumed when it has been distilled, however, you can usually obtain drinking water by digging high up on the beach above the tide mark. It will taste brackish and should only be used in small quantities at a time. The damp sand on the beach would be an ideal place for a desert still.

Where to dig on the coast.

Dew

The collection is tedious, but of some value in heavy grassland. Tie clumps of grass or cloth (cloth is best) around ankles and walk around in dew-drenched grass at dusk or dawn. Squeeze off moisture into container and repeat until enough is gathered. If you have a vehicle, wipe down the vehicle with a cloth.

Transpiration Method

Water can be obtained by placing CLEAR plastic bags (dry-cleaning bags are good) over the leafy branch of a non-poisonous tree and securing the end to the branch. Ensure there are no holes in the bag (seal these with black tape, band-aids, etc.). The action of the sun on the plastic will cause water to be drawn from the leaves and run to the lowest part of the bag. Do not disturb the bag to collect the water, simply cut a small hole in the bag then reseal it. The leaves will continue to produce water as the roots draw it from the ground.

The transpiration method.

Hints:

(1) The water should be drained off every four hours or so and stored. Tests indicate that if this is not done the leaves stop producing water. Probably the heavy concentration of moisture-laden air reduces the effectiveness of the sun.

(2) If there are no large trees in the area, you can break off clumps of grass or small bushes and place these inside the

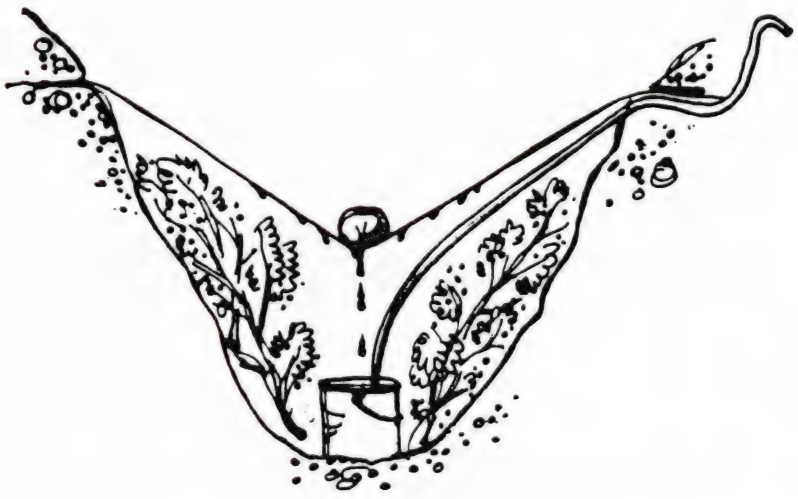
bag. The same effect will take place. If this is done the foliage will have to be replaced at regular intervals when water production is reduced.

(3) Ensure that these bags receive maximum sunshine at all times.

(4) Ensure that exposed roots are tested for water content. Soft pulpy roots will yield the greatest amount of liquid for less effort.

Desert Still

This is another method which takes a little more effort (therefore loss of body fluid). Dig a hole approximately 60 cm deep x 1 m square, line the hole with vegetation (non-poisonous), place a container in the centre of the hole with a long drinking straw in the container running out of the hole (see heading "Survival Kit"). Cover the hole with a clear plastic sheet and seal around the edges with the soil from the hole. The plastic sheet should be weighted with a stone in the centre so that it forms an inverted cone that allows condensed water to run into the centre on the underside of the plastic; on reaching the centre it must then drip into the container as in the diagram.



The desert still.

Hints:

(1) This method will work without the drinking straw, however, to collect the water container the edges of the plastic must be lifted, which allows the moisture-laden air to escape.

(2) The foliage will need to be replaced when water production falls off.

(3) Be careful that the plastic sheet does not touch the foliage, otherwise the condensed water will run down the sheet and back into the foliage.

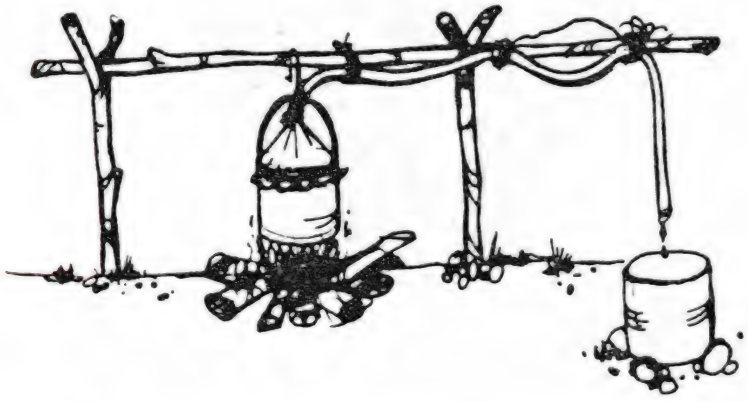
(4) You may have water that can be added to the hole, i.e. sea water or water from salt lakes, urine, etc. (Do not use radiator water which has additives in it.)

(5) Pig face is particularly good in this method and will produce a good quantity of water quickly if crushed when placed in the hole.

Distilling Sea Water

If only salt water is available, a distilling plant can be made. You will have to improvise and use containers that can be found or that you may have.

First you require a container of sea water and material to seal the container to prevent steam from escaping. Into this sealing material place the tubing or rubber hose and check to see that the seal remains intact while blowing into the loose end of the tubing. Place the container onto a fire and bring to the boil. Steam will be forced through the tube where it condenses and fresh water will drip from the end, into another container.



The condensation method

Hints:

(1) Alfoil or similar would make a seal around the container by folding it into a cone shape with the tubing attached to the small end of the cone and placing the large end around the container as shown in the diagram. Secure ends of cone with wire to make the seal.

(2) The condensing will be more efficient if you run the tubing through a cooling agent, i.e. water.

(3) This is not the only method of distilling water; you may simply bring water to the boil and catch as much steam as possible on a piece of cloth and then wring it out. Although this method works, it is not the most efficient method.

(4) You must remember that the steam is the fresh water and therefore you must trap the steam to get fresh water. Any improvised method will do even if you place an open container on the fire and bring it to the boil, then arrange a small plastic "tent" on top of it, the steam will strike the tent, condense and run down to your container or containers.

Water Purification

You must always ensure that the water you drink will not cause internal infection as this will lead to further loss of fluid.

Clarification

The water you drink should be as clear as possible. To achieve this you must strain it to remove the suspended matter, etc. A good method of doing this is to make a filter from the leg of a pair of trousers into which you place the following: fine sand up to one third the length of the trouser leg; charcoal for the next one third; and the top is filled with gravel, small stones, etc. You then hang the leg of the trousers in a tree or similar and pour in the muddy water. It will take a little time but clarified water will begin to seep through the filter and drip into a container placed underneath.

Sterilization

Just because the water is clear does not mean that it has no bacteria in it. To make sure of this you must sterilize any natural water that you drink. To sterilize water you can use several methods; the easiest would be to put in sterilization tablets (see heading "Survival Kit"). The alternatives would be to boil the water or to use other chemicals that will neutralize any bacteria such as Condy's Crystals or Iodine.

Conclusion

Water will be the key to your survival in most Western Australian conditions. If you can use the information outlined to establish a water supply you should be able to survive.

Remember:

(1) Do not waste energy (sweat).

(2) Relax during the heat of the day.

(3) Conserve what water you have.

(4) Drink only in the coolest part of the day.

(5) Don't eat if water is not available.

(6) Sterilize natural water.

6. SHELTER

Extremes of Temperature

Extremes of heat and cold are the enemies of human survival and both these qualities are found in inland arid regions where very hot days are followed by cold nights.

A shelter will provide you with protection from the elements, insects and animals. It is also a big psychological boost and will help you feel that you are managing. Determine what type of shelter you require and plan accordingly.

Using Vehicles as Shelter

Vehicles are a source of shelter as they provide protection from the sun during the day and the cold air at night. Blankets or branches can be used to keep direct sun from the vehicle. Boot lids and bonnets can be removed to form lean-to's and therefore more shade areas.

Space Blanket

Space or rescue blankets (see heading "Survival Kit") are cheap, lightweight and an ideal item to assist in providing shelter. The reflective surface reflects the sun's rays from the person sheltering underneath.

Natural Shelter

If nothing else is to hand you will have to use bush materials. When constructing a shelter you should consider the following points:

(1) Type of protection required.

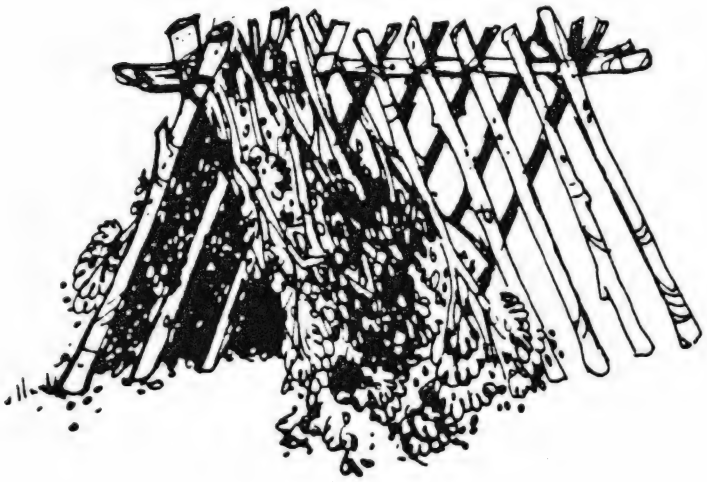
(2) Availability of materials.

(3) Prevailing winds and weather.

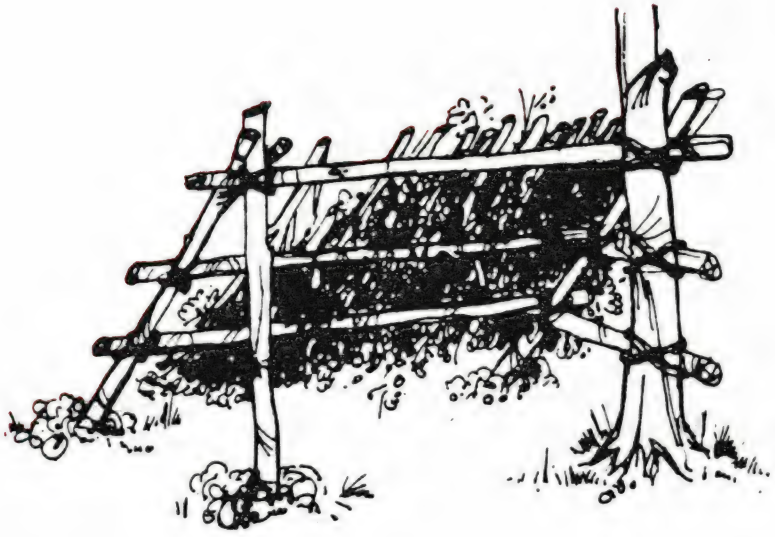
(4) Proximity of water.

(5) Close to your emergency signals.

Keep your plan for a bush shelter fairly simple and straightforward (see following diagrams for types of shelters).



The "A" frame shelter



The lean-to shelter

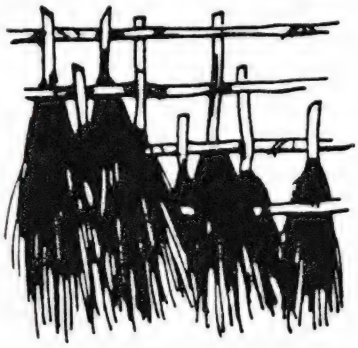
The Aboriginal shelter

When you begin construction, use larger branches for your basic frame as you will find a roof fairly heavy when it is wet and they will have to support it. Branches can be tied together using vines,

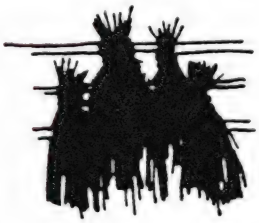
strips of bark or swordgrass. If you are near your vehicle, strip out wires to use for this.

Thatching

If your vehicle is handy, you can pull out the head lining to use to make a waterproof roof. If not, then blankets, sleeping bags or even spare clothes can be used for a sunshade. Thatching can be done by using materials such as leaves from palms or leafy branches; even tufts of grass tied together will provide a thatch. Some types of thatching you can use are:



Batten thatching.



Tufted grass thatching.

Split stalk thatching.

Your shelter will depend largely on what is available to use and what the conditions are. Common sense will guide you but be warned, a shelter takes a good deal longer to build than one imagines. If you can find something that will provide a part of a shelter, i.e. a hollow log, then use it as the basis of your shelter, this will save time and energy.

Whilst building your shelter remember that heat stroke and loss of body fluid can be avoided by keeping in the shade and moving as little as possible during the heat of the day.

Clothing

Protective clothing and head gear are essential to prevent sunburn and other heat related illnesses. Your clothing will also provide protection from insect bites, etc.

7. WARMTH

Fire has been mentioned several times in this booklet and rightly so. It cooks, warms, sterilizes and acts as a signal if necessary. Always carry some form of fire starter with you on trips (waterproof matches or lighter).

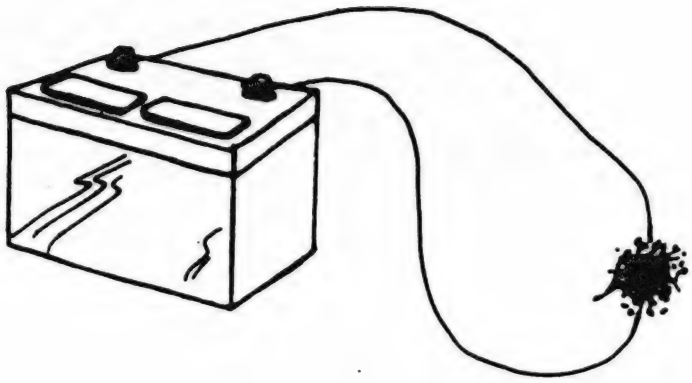
Very few people can light a fire without matches or lighter, however, if you don't have these then try one of the following methods.

Vehicle Method

Your vehicle has probably been fitted with a cigarette lighter. Use this to ignite a petrol soaked rag (outside the car).

If you don't have a lighter then pull out two wires from the vehicle and attach these to the terminals of your battery, run them away to the ground. When the ends are touched together they will spark and ignite your tinder.

Note: The gas produced by a battery is highly volatile and if exposed to a spark could cause an explosion. Make sure the fire is started away from the battery.



Car battery method.

Friction Method

The methods used by the Aborigines and Indians may be your only alternative. Don't be put off by this because they are very successful. You will require the following:

Bow.

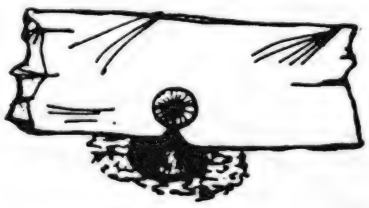
The BOW can be any branch of a tree and should be approximately 45 cm to 60 cm long. Tie some nylon cord around the tip and down to the handle.

Head stock.

The HEAD STOCK is simply a piece of hardwood with a groove cut into it to hold the top of the drill.

Base.

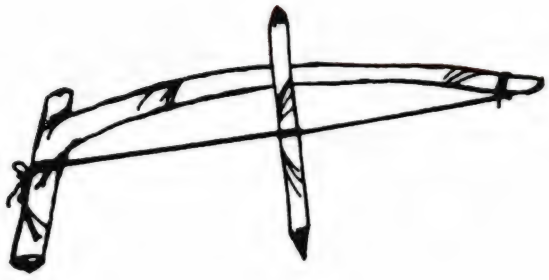
The BASE is a softer piece of wood (DRY) flattened so that it will sit on the ground and flattened on top to allow the drill to start. A small groove is cut into the side of the base directly beside where the drill is to be used to allow the shavings or punk to fall onto the tinder which will be below this groove. An additional groove is now cut into the top of the base above the groove just described to facilitate the start of the drill.



Base with ground out "punk".

Drill.

The DRILL is a piece of dry wood of medium to soft texture approximately 30 cm to 40 cm long and as straight as possible. The diameter should be approximately 1½ cm to 2 cm. The drill is sharpened to a point at both ends to fit into the starting groove of both the base and the head stock. To use this you have to take a turn around the drill with the nylon cord attached to the bow.



The bow and drill.

Then pull it tight. If you have used green timber for a bow the tension will be applied automatically, otherwise use your fingers to hold it tight. Place the tip of the drill into your base starting groove and hold the head stock onto the top of the drill. Now, by pushing and pulling the bow (slowly at first) the drill is caused to turn in the base plate.

As the speed is increased so friction will cause sawdust or punk to fall down the groove into the tinder. This will glow and can be gently blown into a fire.

The fire bow method.

Hints:

(1) One of the better types of wood to use for the drill is blackboy. This can also be used for the base. If these are not available then the roots of some trees will work.

(2) If you wish to remain warm from a single fire you can arrange your rescue blanket as a type of fence behind you, this will reflect heat and keep you warm all round.

(3) Remember just how important warmth is to your survival. Hypothermia or exposure does kill and therefore a fire can be vital in providing warmth, etc.

8. FOOD

Although food is not as important as the three preceding factors, it is necessary for a prolonged survival situation. Any available food should be eaten sparingly, keeping in mind that it is better to have one meal a day than to nibble small amounts. The average healthy adult can live for several weeks without food so this will give ample time to locate nourishment from natural sources if necessary.

Food Sources

- Animals.
- Bird life.
- Marine life.
- Insects and grubs.
- Plant life.

In considering natural sources of food, there are five important points to remember:

(1) Most animal, bird and plant life is protected and should only be used for food sources in emergencies. Should it be necessary to kill, only kill what is necessary for survival.

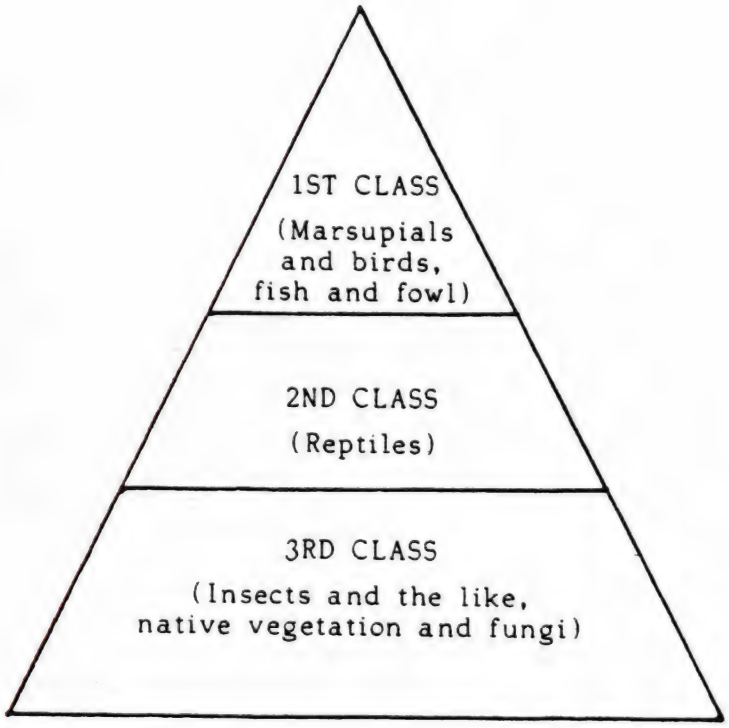
(2) The body needs fluids to digest food, so foods with a high water content should be considered before others. If no water at all is available, then food should be avoided, particularly meat, which requires more fluid to digest than vegetation.

(3) It does not need a skilled hunter to obtain food in the bush. Even without weapons of any description, enough lizards, insects, grubs, etc., could be found to keep a person alive

for several days simply by looking under rocks and dead branches, tree stumps and anthills.

(4) If possible all foods should be cleaned carefully by washing, then cooked, thus lessening the chances of any infection or stomach upsets.

(5) Generally bush food is tough, fibrous, unpalatable, and to some, even nauseating, it is food nevertheless. The following diagram indicates the food preferential.



Animals and Reptiles

The presence of any animal or bird life in an area is evident by tracks, droppings and traces of fur or feathers. If one has been lucky enough to find a waterhole used by animals, then it is a simple matter to sit under cover, down-wind from the water source at dusk and either shoot or snare the animals as they come to water.

Even by walking through the bush quietly during the day it is possible to surprise sleeping animals in creek beds, under shady trees and amongst rocky outcrops.

Some of the most likely animals seen in the bush are as follows:

(1) Kangaroos and small marsupials.

(2) Wild goats, donkeys and pigs.

(3) Rabbits.

(4) Snakes, lizards and frogs.

(5) Sheep and cattle.

Some imagination and bushcraft is needed in knowing where to look, how to recognise tracks and how to snare the faster moving animals.

Snaring Animals

In the absence of a firearm or manufactured animal trap, most animals can be snared with a wire noose placed in a convenient position such as the entrance to a hole or above an animal path between two trees. The noose should slide freely and the other end of the wire anchored securely to a tree or post. As the animal passes through the noose, the noose tightens around the neck quickly killing it as it tries to pull free. This type of trap is generally successful at night when the animal cannot see the snare; care should be taken not to leave any human smell on the wire. Owing to the cruel nature of the snare, it should only be used when other methods fail.

The reef knot snare could also be used to capture a slow moving animal such as a sheep. This is a method where a noose in the form of a reef knot is placed on an animal pad, and the rope pulled tight by the concealed observer as the animal places its foot inside the loop.

Animal Snare

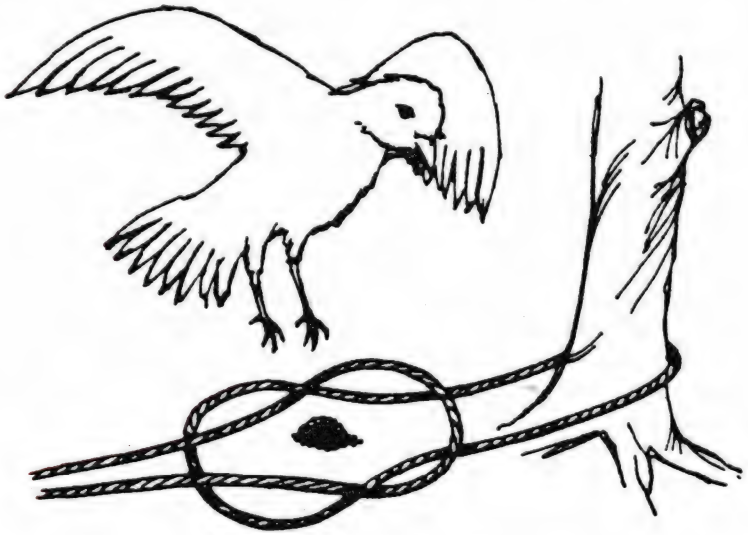
The wire noose is placed in such a position that the animal will not go around it. The noose is best concealed by leaves or twigs so that it is not easily seen.

The noose can be placed between trees, on fences or at the entrance to rabbit burrows, etc.

The animal snare.

The Reef Knot Snare

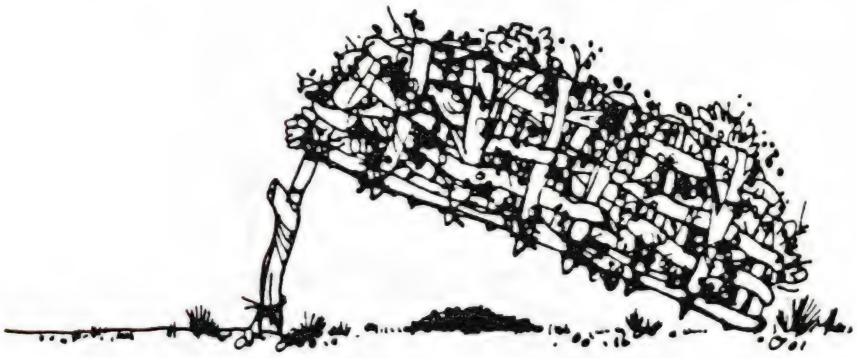
The knot must be pulled tight as the bird or animal places a foot in the loop.



The reef knot snare.

Bird Life

Ground feeding birds can sometimes be trapped by placing grass seeds or other bait under a cage made from wire netting or green sticks woven together. The cage is propped up with a stick which is pulled out by a hidden observer tugging a string as the bird walks under the cage. The cage falls, trapping the bird.



The bird trap.

A fishing line can be used very successfully also. Bait the hook used with an insect or bread, etc., tie line to a tree or stick where the birds frequent.

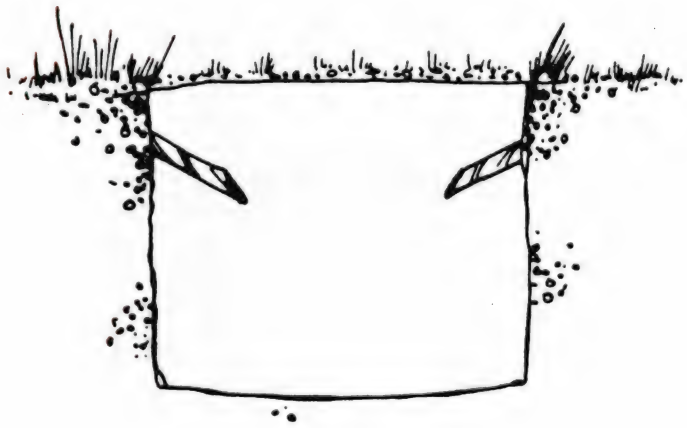
Birds are rather difficult to shoot or trap because of their flighty nature but you may be lucky enough to locate a nest, either on the ground or in the trees, containing eggs or young. Most birds try to confuse intruders by flying away from their nest at the approach of any danger, this has the effect of leading the intruder in the wrong direction, thus protecting the eggs or young.

Emus are very common in outback areas and can sometimes be enticed towards bright objects waved by a person hiding behind a bush.

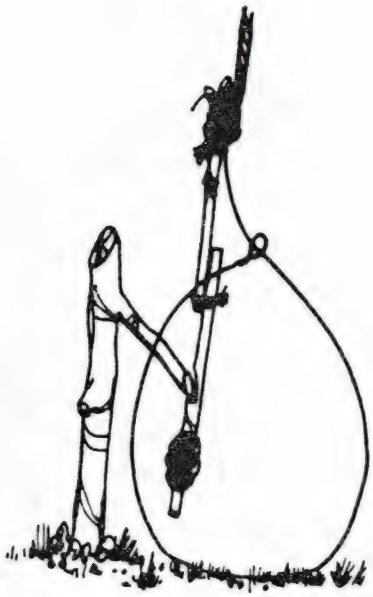
As the bird's inquisitive nature leads it within metres of the object, the person can then step out and kill the bird with a suitable weapon. When shooting or trapping, frequent a water source if possible. Stealth, not speed, is of great importance when shooting and patience at a water hole at dawn or dusk is usually rewarded. If setting a snare, look for signs of fur around a tree's base or signs along a fence line to indicate where an animal has passed through. Animals will return to the same tree to sleep and will continue to negotiate fences at the same spot.

The following are some basic guides to the types of snare that will work and enable you to catch your game.

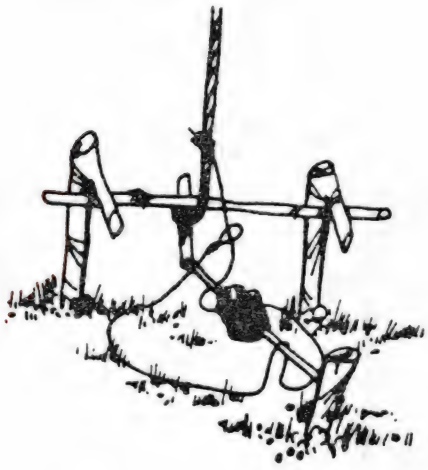
The possum snare.



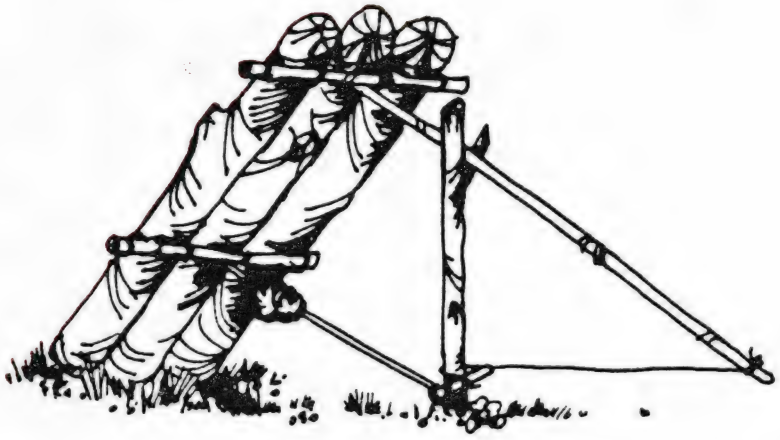
The pit trap.



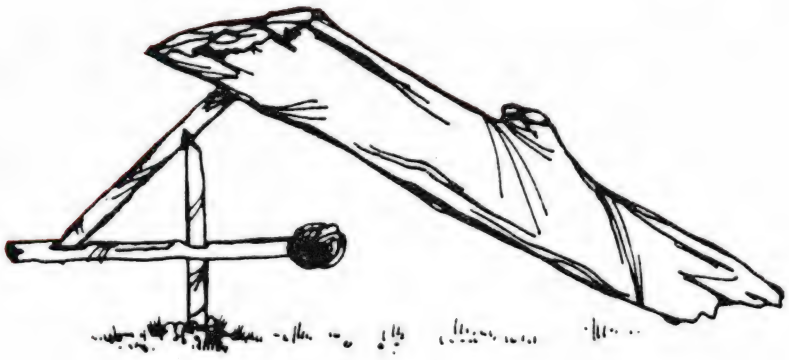
The bait stick snare.



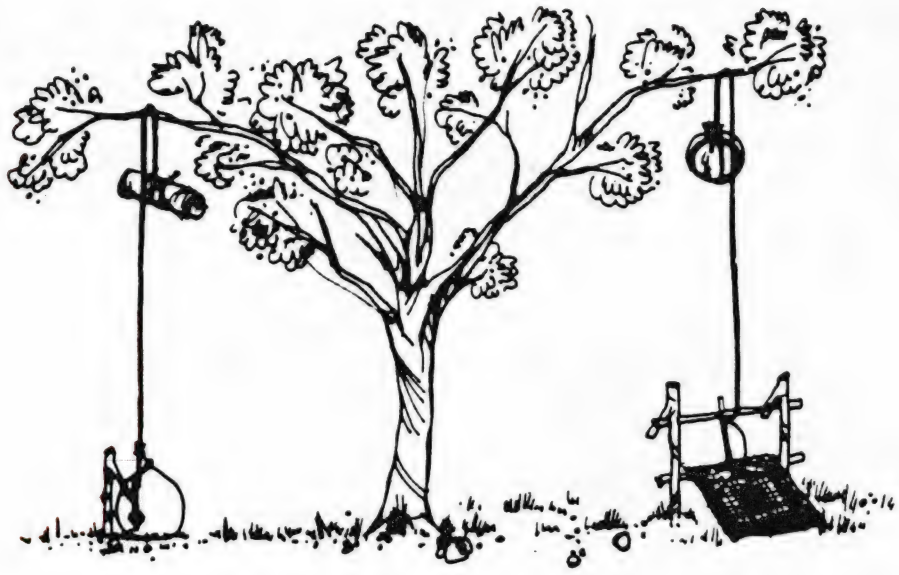
The toggle stick release snare.



The toggle stick deadfall.



The figure four snare.



The baited stick snare

The toggle stick release snare with platform.

Reptiles

All reptiles are edible including venomous snakes (remove the head and portion of the neck to remove the venom glands). Goannas and like reptiles are fatty and oily so if you have to eat these, overcook them. Remember, care must be taken when catching venomous snakes and certain reptiles as the bite can be fatal or lead to infection which can also be dangerous.

Marine Life

Fish can be caught using the usual method of a baited hook whether they be in the sea or inland rock holes. They can also be trapped near the water's edge by using a fence of upright sticks pushed into the sand close together.

This type of fish trap is used by commercial fishermen in tropical areas with extreme tides where netting is used in place of the sticks. The fish are trapped by the mesh of sticks and easily removed when the tide goes out.

Another method of gathering sea food is by digging in the sand or turning over rocks for shellfish after the tide has receded. This is how some fishermen collect bait for line fishing.

Seaweed

Seaweed found on the beach is rich in vitamins, minerals and proteins and is a suitable food source. Only select the new young growth and avoid eating too much at once until you are used to it as it can act as a purgative. It can be eaten raw but is best boiled to make it more tender.

Seaweeds are classified according to their colour red, green or brown. The group of red seaweeds contain the only elements likely to do any harm but it is reported that no seaweed containing more than one cell is actually poisonous.

Insects

Insects and their larvae are often overlooked as a source of food even though they are widespread and easy to obtain. One hundred grams of fried termites have a calorie value of 561, which puts them amongst the richest foods. Most other insects have a high food value and are a particularly good source of nourishment as well as having a high fluid content. In some overseas countries, maggots, grasshoppers and termites form part of the natural diet.

Termites can be obtained by breaking open anthills or dead wood and picked up on the end of a wet fingertip. The taste is in no way offensive and the same can be said for ant eggs.

The insect larvae known as the "bardie" or "witchetty grub" is obtained by breaking open dead trees and blackboy stumps after examining for the characteristic borer holes. Other insect larvae may also be present and can be eaten if there is no offensive smell or taste.

Do not eat furry grubs or grubs with black showing through the skin. Snails and slugs can be eaten but are an unlikely source of food as they favour wetter areas and there would be alternative food available.

Honey ants can be collected near the base and on the branches of trees in tropical areas. The fluid from their abdomens is good nourishment as is honey from wild bees if you are lucky enough to locate this.

Beware of stinging insects as illness could result. Petrol applied to ant bites will relieve the pain of the sting.

Some Common Types of Edible Vegetation

A vast number of plants which can provide food in an emergency occur naturally in Western Australia. However, many of them are hard to identify without expert help and many more have sharp or tangy juices which discourage people who cautiously taste them. This list gives only a few of the well-known plants which might be located by stranded wanderers in various parts of the State.

- The seeds of many of the native pea and bean family are highly poisonous. It is best to avoid these native plants even though garden varieties are good to eat. After all, if you are already working hard at surviving, you do not want to add illness to your misfortunes. You should also avoid the palm-like plants. Zamia palm fruits contain poisons and so do the young shoots. Unless you are absolutely certain of the identity of the palms that you are about to eat they are best left alone.

- Banksia - Many of the flowers of the Banksia and Grevillea family contain large amounts of sweet nectar which can be sucked directly from the flower.

- Blackboy (Xanthorrhoea sp) - have an edible white substance at the base of the green leaves. This is quite sweet when eaten raw. The plant is killed when you remove this growing heart so treat this plant strictly as emergency food.

- Bracken Fern (Pteridium sp) - and some other large ferns are edible while the green shoot is in the "fiddle-head" stage. Although they can be eaten raw, they are more palatable when cooked. The underground stems, although stringy, are rich in starch and roast up well in the campfire.

- Bulrush (Typha sp) - is recognised by its felty, brown flower spikes rising above the erect grass-like leaves. These plants generally grow along the edges of lakes, swamps and large dams. The horizontal stems are rich in starch but need pounding to separate this from the strong fibres running through the plant.

- Emu Plums (Podocarpus drouynianus) - a low shrub found in the southern forests yields a dark purple, edible fruit of good flavour. The attached green "seed" should be discarded.

- Figs (Ficus sp) - Fig trees of one kind or another are found across much of Australia's inland. Their glossy, green leaves are very distinct and the red, pulpy fruits are excellent eating.

- Fungi - This special group of plants is best avoided. Although many of the fungi which are found in Australia can be eaten, they provide little nourishment and there is no general rule to eliminate the deadly species.

- Geebungs (Persoonia sp) - These shrubs or small trees are found mainly in the south of the State. Their small fruits are edible and are tastiest when collected from beneath the tree bearing the fruit. These sticky fruits are also given the unappealing name "snotty gobble".

- Kurrajongs (Brachychiton sp) - with their dense crowns of bright green leaves are easily identified by their boat-shaped, woody seed-pods filled with shiny, yellow seeds. Use a stick to remove the seeds from their pods as the small hairs surrounding the seeds are very irritating to the skin. The collected seeds, rubbed free of their individual shells in a dish, say a hub-cap from the car, can be roasted and pounded with a little water to make a porridge. Roasted until black and then crushed, the seed can be used like ground coffee to provide a refreshing drink.

- Native Banana (Leichhardtia australia) - is a vine with greyish leaves, tiny flowers and white, milky sap. Even though milky saps usually indicate that poisons are present, the immature, large, greenish, pear-shaped fruit can be eaten raw or cooked. When the fruit ripens only the yellow seeds and the outer skin are edible.

- Native Cherry (Exocarpus sp) - These shrubs or small trees usually have a greenish-yellow tinge to their tiny leaves and branches. Hidden against this foliage are small, red, sweet fruits, the seed of which hangs below the edible part.

- Pigweed (Portulaca sp) and Pigface (Carpobrotus so) - are succulent plants found in sandy areas of the State and often near the coast. The water in their fleshy leaves is a little salty but can be purified in a desert still. The ripe, red fruits of Pigface contain a sweet, jam-like substance which can be eaten raw.

- Quandongs (Santalum acuminatum) - are well-known for their round, wrinkled seeds, the roasted kernel of which is edible and quite nutritious. The bright red, outer flesh of the ripe fruit is also edible, tasting somewhat like an unripe apple. A related series, the Native Plum (Santalum lanceolatum) bears a tasty, dark purple fruit.

- Saltbush - Many of these have small, juicy, yellow or red berries which are edible. Boiling the young leaves in several changes of water produces a substitute for spinach, but is hardly worth the effort involved.

- Water Lilies (Nymphaea sp) - are among the water plants which have edible tubers or potato-like growths at the base of the stems. They taste best when roasted in the ashes of the camp fire. The stems of the leaf and flower of the giant water lily have the texture of celery and can be eaten raw.

Tests for Plant Edibility

The foregoing list is a guide to edible plants that you may be able to identify, there are many more edible plants but the availability will depend on where you are and the season.

Should you find vegetation that you think is edible you must carry out the taste test to reduce the chance of eating something that will harm you.

Look - Does it look like something you can eat. Look for poison indicators, i.e. prickles, milky sap, etc.

Smell - Break open or crush it and smell it, be wary of things that smell like almonds or peaches.

Touch - Rub a portion onto a tender part of your body (inside wrists) and wait twenty minutes or so to see if a rash develops.

Taste - Rub a small portion on the inside of the lip and top of the tongue, testing for flavour and waiting for a reaction.

Eat - Eat only a very small portion (if all the above tests prove negative) and wait a few hours to see if there are any reactions.

If there is no reaction then you may eat a larger portion, continue to do this until you are sure that even large quantities do not harm you.

Should the part you have tested prove to be inedible then do not discard it, as cooking may make it edible. If one part of a plant proves to be inedible then you should be prepared to test the other parts, i.e. roots, leaves, etc.

Always carry out the taste test on anything that you cannot positively identify, as this will reduce the risk of poisoning.

9. NAVIGATION AND AIDS TO NAVIGATION

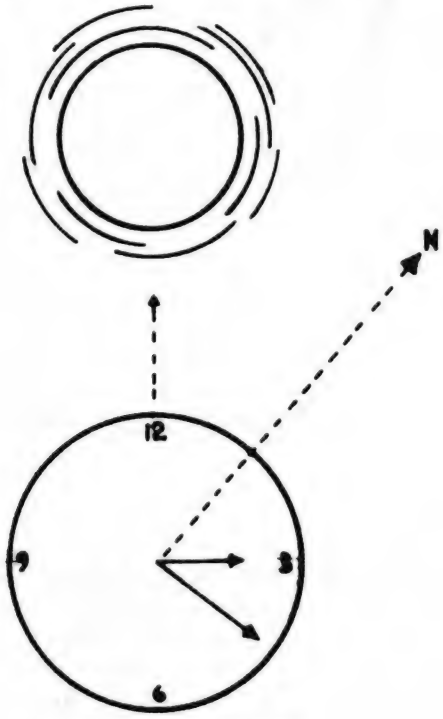
In almost every case it is best to stay with your vehicle or aircraft as searchers will locate this first. You may have become lost while walking and for this reason you will have to know how to navigate.

10. DIRECTION FINDING BY DAY

Watch Method

To find north using your watch simply stand holding your wristwatch horizontal with the figure 12 pointing at the sun, bisect the angle between the hour hand and the 12 o'clock position and the line will indicate north.

Note: This method will not apply to areas north of the tropic of capricorn during midsummer.



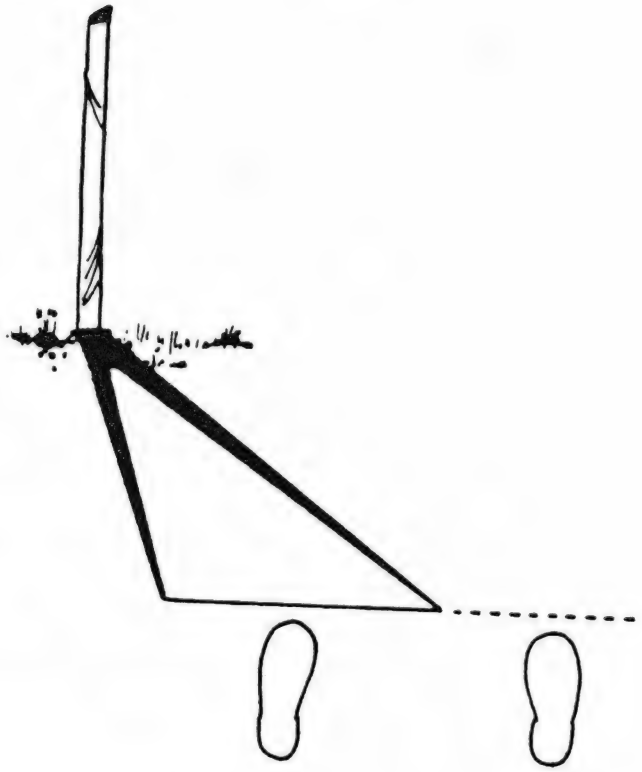
The watch method.

Shadow Stick Method

To use the shadow stick method push a stick vertically into the ground and place a stone at the end of the shadow. After a wait of 20 minutes place another stone at the end of the shadow. A line drawn from the first stone through the second stone will be a west-east line.

Stand with your left foot between the stones and your right foot past the stones on the line drawn and you will be looking north.

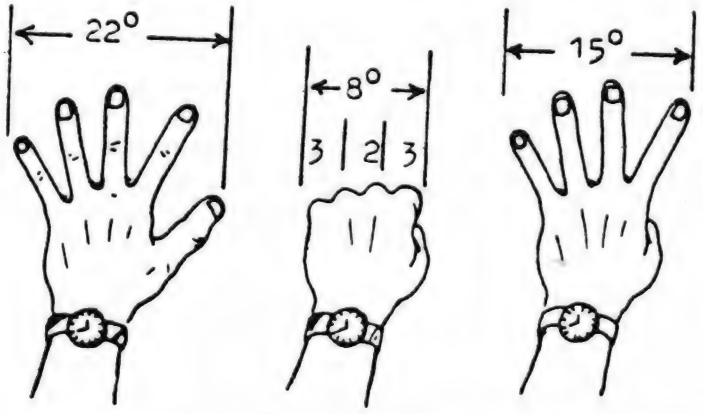
Note: In midsummer in areas north of the tropic of capricorn the shadow stick will be behind you.



The shadow stick method.

Sun Movement

The sun crosses the imaginary north/south line (meridian) every day at noon and there are 24 hours between crossings of the meridian. During this time the earth revolves through 360°. It can therefore be said the sun travels from east to west at a speed of 15° per hour. To find north simply note the time and plot the sun from its present position backward or forward as the case may be to noon.



A bushman's method of measuring degrees.

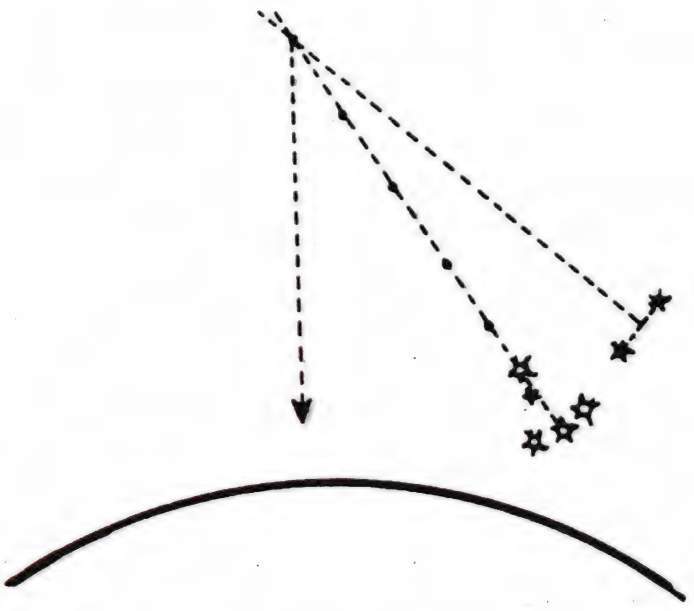
Hints:

A rough estimation of north can be obtained by remembering that kangaroos rest in areas of shade during the heat of the day. Because we are in the southern hemishpere the shade areas will be more on the south side of bushes, look for small disturbed areas of earth and these should indicate generally south.

11. DIRECTION FINDING BY NIGHT

The Southern Cross

The Southern Cross can be used to indicate south by extending an imaginary line through the long axis, then locate the two pointers and bisect them at right angles with another imaginary line. Where the two imaginary lines meet, drop a line straight down to the horizon, this will indicate south.



The Southern Cross with "pointers".

An alternate method is to extend the imaginary line down the axis only and extend it for a distance equal to four and a half times the length of the cross, then drop a line straight down to the horizon, this also will indicate south.

Orion's Belt

This is commonly called the saucepan and is used to indicate approximate north. You draw an imaginary line down the handle and through the centre star of the base, continue down on this angle until your eye reaches the horizon, this will be approximate north.

Note: This method is only to be used when Orion is high in the sky, near the horizon it will be incorrect.

12. NAVIGATING BY NIGHT

You will find it very easy to navigate using the stars, particularly in the more arid regions of Western Australia. All you have to do is first establish where north or south is, then draw a line on the ground north/south, bisect this line with another line at 90^{o}, this will then show east and west. You now have your compass.

Once you decide in which direction to travel, you can stand on your makeshift compass and face the direction you intend moving, look for a bright star, or better still, a group of stars that are in the required direction, and move towards them.

Hints:

(1) Try to select stars that are not right on the horizon as you will lose sight of these when moving around trees.

(2) Remember that stars move from east to west in the same manner as the sun and you will have to allow for this at 15^{o} per hour.

(3) Stop periodically and check your direction by drawing your compass on the ground again.

13. PROCEDURE IF LOST

If you do become lost, try to remain calm, as panic will put you at a psychological disadvantage. The situation is not as hopeless as you may think.

If by any chance you have taken the wrong track and you do not know where it is going to lead you, it is pointless going on any further. It would be safer to return the way you came by retracing your tracks back to a point where you can establish your location.

Case histories reveal that most people, when lost, push on blindly in a state of panic hoping that they might end up "somewhere". In these cases their efforts either take them further away from civilization or around in circles. Do not underestimate the huge vastness and great distances of our Australian outback.

If in a Vehicle

Stay with or near your vehicle if possible, as it is a source of shelter and water (provided there are no chemical additives in the radiator). Also it is easier for search parties to locate a vehicle than to locate a solitary human being wandering around somewhere in the bush.

If you have to leave your vehicle temporarily to search for food or water, mark your trail on the ground with sticks or stones so you can find your way back. Otherwise you may find it hard to locate your vehicle once it is out of sight. Only walk in the cool part of the day to minimise fluid loss and exposure to the sun.

If on Foot

Once you decide you are lost consult your map if you have one and use it in conjunction with your recollection of the country you have traversed to try to identify a feature. You can consider retracing your route to your last known position; or you can make for higher ground in an attempt to fix your position.

Once you have decided you cannot fix your position, then there is nothing left but to select a camp site and stay put. As long as you have taken the precaution to notify someone that you were going, then a search party will be looking for you.

14. VEHICLE BREAKDOWNS

Handy Hints

If a vehicle breakdown does occur it is often possible to improvise parts and make the necessary repairs. In some cases wire can be substituted for nuts and bolts. Nylon stockings or soft rope tied in a circle can replace a broken fan belt.

A piece of thick canvas or animal skin can be used to make a sleeve for a blown tyre. A flat tyre filled with sand, clothing or vegetation will allow you to travel a hundred kilometres if necessary.

In the case of a holed petrol tank, place a piece of rag covered with condensed milk over the hole. The petrol will harden the milk to form a seal.

Mustard or pepper added to the radiator will effectively stop minor leaks. Where the radiator is extensively damaged, a small amount of cement or insoluble adhesive applied to the damage may get you out of trouble.

When the battery is flat and the vehicle cannot be push started, it has been found that a vehicle with manual transmission can be started by jacking up a rear wheel, rotate the wheel in a forward direction while the transmission is engaged in top gear and the ignition switched on.

A successful way of getting a vehicle out of a bog is by jacking up each of the four wheels individually and placing material such as sticks, stones, pieces of anthill, etc., under the tyres. This lifts the vehicle out of the bog, at the same time giving a firm surface for the tyres to grip on.

The biggest problem with this method is getting the jack under the vehicle. This should be attempted before the vehicle sinks into the soil otherwise a separate hole for the jack will be needed and the car jacked up in several stages, blocking it up each time.

The normal practice of digging the vehicle out often results in the vehicle sinking lower in the soft ground, so this method should be avoided if possible.

When driving on water-logged roads, it is better to keep to the centre and avoid soft edges. It may be a rougher ride but the road surface is usually harder. When crossing flooded creeks test the depth and current before crossing. If the rain has stopped the water level quite often drops after a few hours, so it is better to wait until this happens.

Some motorist carry tyre chains which are installed before entering water-logged roads.

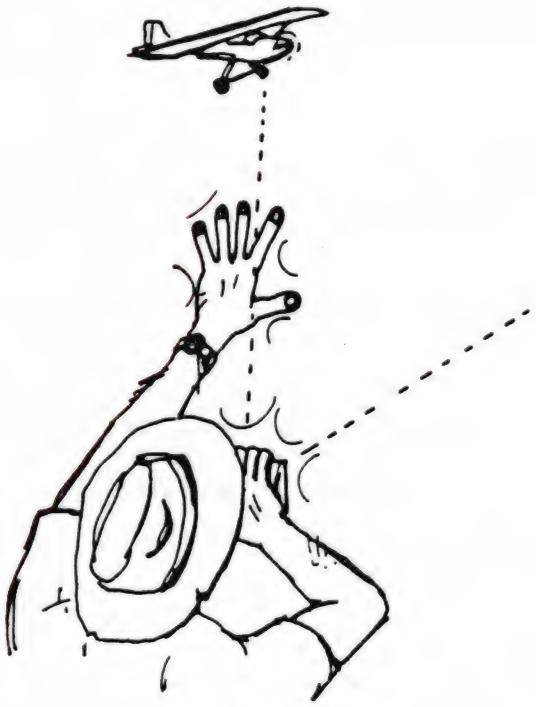
An expensive accessory is the "bull-bag". This is a blow-up rubber bag, inflated by connecting to the exhaust pipe with the engine running. This has the effect of jacking the vehicle up and it can be used on any type of surface.

To lessen the possibility of breakdowns and accidents, particularly on rough roads, it pays to drive slowly and cautiously. The journey will take you longer but there will be little risk of damaging your vehicle.

15. EMERGENCY SIGNALS AND THE INTERNATIONAL CODE

Position indicators and the international code. The following methods can be used to indicate your position:

(1) Mirror - Your survival kit will contain some foil which can be used if you do not have a mirror or heliograph for use in bright sunlight.



Signalling with a mirror.

(2) Fires - A smoking fire will aid searchers, both in daylight hours and at night.

(3) Whistle - The signal code for use with a whistle is as follows:

(a) Distress signal by lost party - three signals together, regularly spaced.

(b) Searchers looking for lost party - one signal at regular intervals.

(c) Acknowledgement of distress signal - two signals in quick succession, repeated every two minutes.

(d) Recall signal for search parties - four evenly spaced signals, repeated occasionally.

(4) Gun Shots - As for whistle signals.

(5) Torch Flashes - As for whistle signals.

Ground to Air Code

This is a universal code used to communicate with rescue aircraft. The figures should be large enough to be seen from a distance, approximately eight to nine metres in length.

Materials

Contrasting materials should be used, such as rocks on sand or logs and brush. Trenches in sand can be used to throw a shadow.

GROUND-AIR VISUAL CODE

FOR USE BY SURVIVORS

No.	Message	Code Symbol
1	Require Assistance	V
2	Require Medical Assistance	X
3	No or Negative	N
4	Yes or Affirmative	Y
5	Proceeding in this direction	↑
IF IN DOUBT USE INTERNATIONAL SYMBOL S O S		

Action by Aircraft

The aircraft will indicate that your signals have been seen and understood by -

(1) in daylight - rocking from side to side;

(2) at night - green flashes with signal lamp.

If ground signals have been seen by the aircraft and not understood, he will -

(1) in daylight - make complete right-hand circles;

(2) at night - red flashes with signal lamp.

16. BUSHFIRE SURVIVAL

Every year in Australia there are serious bushfires in which people are caught and sometimes die. In some cases these deaths could have been prevented if the people involved had not panicked and had a basic knowledge of bushfire survival. Here are some basic rules.

Panic

Panic causes energy loss and poor judgment. Act calmly and do not run unless absolutely necessary.

Breathing

When the smoke is dense restrict your breathing and wait for small pockets of fresh air. The air closest to the ground will be cooler and fresher.

Heat

Radiated heat is the real danger; use anything to avoid it, culverts, running streams, ponds, rocks or depressions. Radiated heat travels in straight lines so if you can put yourself behind something you will avoid it.

Flame Fronts

Do not attempt to run through large flame fronts, or where the undergrowth is extremely dense. Always move downhill from a fire as fires travel faster uphill, never run from an encircling fire unless

you are sure of escape. Always carry matches and be prepared to light up an area to move into after it has burnt.

Critical Periods

When you have no escape possible you should lie on the ground (bare ground, in a rut or behind a log or rocks) or if possible, bury yourself and stay put. You must endeavour to cover all exposed skin. Control panic and you will survive.

Clothing

As soon as you realise that you are in danger from a bush fire cover as much exposed skin as you can with any clothing available. Do not use nylon clothing. If your clothes catch fire do not run as this only feed air to the fire. Do not panic, roll on the ground or use blankets, etc., to smother the fire.

In a Vehicle

Many tragedies have occurred because people left the safety of their vehicles and tried to flee from a fire. Your vehicle will provide much protection from radiated heat. If your vehicle becomes too hot to bear you can still shelter outside in the lee of it, by this time the quick burning vegetation around you will have been consumed and the main blaze have passed.

In general, avoid panic and you will survive.

17. BUSH FIRST AID

Definition

What you can do to assist an injured person on the spot in the circumstances prevailing.

FIRST aid is the FIRST treatment available to the victim: remembering conditions of FIRST importance must receive attention FIRST.

Order of Urgency

(1) Protect patient from further injury.

(2) Restore breathing and heart beat if necessary - mouth-to-mouth resuscitation and external cardiac compression.

(3) Stop bleeding.

(4) Minimise pain:

- immobilise fractures;
- cold water on burns.

(5) Reassure patient.

(6) Seek further aid.

Assessment

(1) Note cause or circumstances of accident and arrange protection from further injury.

(2) Speak to the patient quietly and confidently. Ask what happened. Enquire about pain, numbness, headache, giddiness and nausea. If no answer, patient may be unconscious; proceed as for the unconscious patient (see below).

(3) Check for breathing: examine mouth for any obstruction - tongue may have fallen back.

(4) Note dampness (possibly blood) in hair, on clothes, on exposed parts, on ground or from ears, nose or mouth.

(5) Check for deformity or abnormal mobility of limbs.

(6) Undo all tight clothing or cut clothing to expose injured regions.

(7) Check pulse by feeling on the thumb side of the inner surface of the wrist or either side of the neck next to the "Adam's apple" - should be less than 100 beats per minute.

(8) Organize party (if in a group) to assist with the handling of the patient and to go for further aid if warranted.

The Unconscious Patient

Many causes - heart attack, drowning, electrocution, head injury, smoke inhalation, shock.

General treatment is always the same:

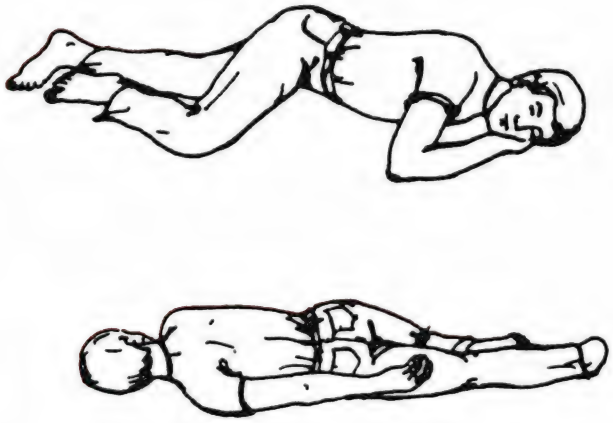
(1) Remove patient from cause or vice versa.

(2) Examine patient quickly as above - detailed examination later.

(3) Mouth-to-mouth breathing and/or external cardiac compression where necessary.

(4) Stop bleeding.

(5) Turn patient into coma position when breathing and heart beat present or restored.



The coma position.

Detailed Examination

(1) Breathing - Check for and/or establish a clear airway.

(2) Heart Beat - Check for and count pulse time pulse rate with a watch.

(3) Bleeding - Examine hair, clothes and exposed skin for bleeding or for bruising or swelling under the skin.

(4) Colour of Face - Flushed, pale, blue or livid.

(5) Head - Swelling, deformity, burns. Examine mouth for foreign bodies, froth or blood feel jaw and examine ears for bleeding.

(6) Eyes - Look at pupils for equal size and response to light.

(7) Body and Limbs - Check for fractures, dislocations, burns; compare both sides for limpness.

(8) Skin - Test by feeling for raised or lowered temperature.

Shock

Recognition:

- Cold and clammy.
- Rapid, feeble pulse.
- Rapid, shallow breathing.
- Thirst.
- Weakness, anxiety, restlessness.

Treatment:

(1) Minimise fluid loss, i.e. stop bleeding, shelter patient.

(2) Give fluid if conscious.

(3) Place in head-down position.

(4) Keep patient warm and dry.

(5) Reassure.

(6) Minimise movement.

Bleeding

Place pad on bleeding area and hold firmly enough to stop the bleeding: bandage in place if practicable. If blood seeps through, apply another pad or bandage firmly over the top. NO TOURNIQUETS.

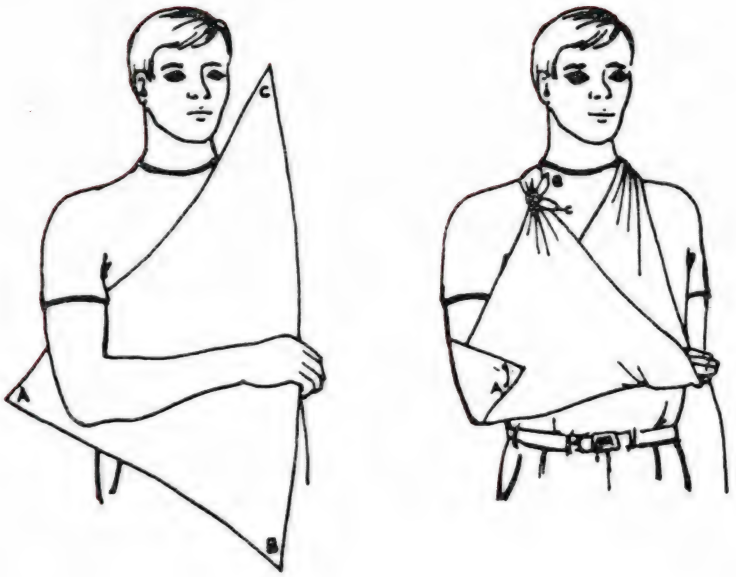
Fractures

Immobilise:

- Fingers - Splint or strap finger to adjacent one.
- Lower leg and ankle - Splint.
- Thigh - Splint whole leg or bandage legs together.

- Pelvis - Strap legs together.
- Upper arm - Collar and cuff sling, bandage to chest.
- Forearm and wrist - Splint and sling.
- Ribs - Leave alone.
- Spine - Leave alone, do not move patient. If situation makes it essential to move patient, do so by pulling with one hand under chin, the other grasping the hair at the back of the head keeping head bent backward. Allow his whole weight to be dragged by this head grip to a position of safety.

The collar and cuff sling.



The arm sling.

Sprains

(1) Contrast bathing if available.

(2) If not, cold compresses.

(3) Firm bandage.

Head Injury

(1) General rules for the unconscious patient.

(2) Seek help.

Burns

(1) Cold water as soon as possible in ALL cases.

(2) Greasy dressing and cover.

(3) Do NOT use butter.

Snake Bite

(1) Firm bandage over the bite; continue bandaging firmly as far up the limb towards the body as the bandage or bandages will allow.

(2) Immobilise the limb with splint or sling.

(3) Seek assistance - carry patient if possible.

(4) Identify snake if possible.

Ticks

(1) Cover adherent tick with greasy or oily substance and leave 20 to 30 minutes.

(2) Remove tick with fine point tweezers, placed right against the skin and pull sideways or dig out with needle point.

Hypothermia

Hypothermia is the lowering of body core temperature.

Recognition:

- Mild Hypothermia:
  - . Skin feels cold.
  - . Skin looks blue or livid (mottled).
  - . Patient shivers.
  - . Patient feels cold and says so.
- Severe Hypothermia:
  - . Skin cold and mottled.
  - . No shivering - shivering response has failed.
  - . Irrational behaviour and speech; may be unco-operative.
  - . Patient may be unconscious; if so, is near death.

Note: A victim of cold can be resuscitated after a much longer period of "technical death" (i.e. when no pulse or breathing can be detected) than a patient at normal temperature.

Treatment:

(1) Shelter in warm, dry environment.

(2) Replace wet clothing with dry clothing.

(3) Leave arms and legs cold, but insulate limbs with blankets to minimise further heat loss.

(4) Rewarm critical areas - chest, neck and head - by body to body contact with two or more persons or by placing heated objects (e.g. hot rocks wrapped in towels to prevent burning the skin) about areas mentioned, particularly the sides of the chest.

(5) Breathe warm air in the vicinity of the patient's mouth (several people if possible) to warm the air breathed into the lungs.

(6) If conscious, rehydrate with warm drinks (non-alcohol).

(7) If unconscious, transport to hospital and LEAVE THE PATIENT COLD while transporting; just insulate with blankets to prevent further heat loss.

Frost Bite

The freezing of tissues - mainly toes, often fingers, sometimes nose.

Recognition:

- Pain in the extremities.
- Failure of skin sensation.
- Skin does not move freely over toes and knuckles.

Treatment:

(1) Do not thaw if likely to refreeze.

(2) Do not rub frozen parts.

(3) Thaw rapidly and completely in warm water at $40^{o}C$ to $42^{o}C$.

(4) Protect thawed regions.

(5) Do not break blisters.

(6) Keep whole body warm to promote circulation.

Hyperthermia (Heat Stroke)

Factors influencing development:

(1) High air temperature - reduces radiation.

(2) High humidity - reduces sweat evaporation.

(3) Clothing - reduces sweat evaporation.

(4) Level of exercise - sustained exercise causes internal heat generation.

(5) Body build - big, well-muscled or fat people are more susceptible.

(6) Level of fitness - unfit people have a poor blood flow to muscles and skin.

(7) Dehydration - reduces blood volume.

(8) Age - elderly at higher risk than young.

(9) Acclimatisation to hot conditions reduces risk.

Recognition (hot conditions):

- Skin feels hot.
- Face flushed.
- Rapid pulse at rest.
- Rapid breathing at rest.
- Dizziness.
- Excessive fatigue.
- Lethargy - no will to go on.
- Irrational behaviour.
- Cessation of sweating.

Treatment:

(1) Transfer to cool, shaded location.

(2) Immerse in cold water or apply ice packs, water or alcohol to the skin, combined with fanning.

(3) Concentrate on cooling head, neck and chest.

(4) Rehydrate - give cool fluids orally.

(5) Keep at rest.

Salt Depletion

Recognition:

- Muscle cramps after sweating in hot conditions.

Treatment:

(1) Oral fluids.

(2) Salt tablets - or preferably one of the commercially marketed, balanced electrolyte replacements dissolved in water.

18. MENTAL ATTITUDE

As previously stated, your survival will depend on you adopting a positive approach to the situation. You have to overcome panic and immediately set about providing yourself with the basic requirements according to the environment in which you find yourself.

Many people who perished, did so because they did not believe that a survival situation existed until too late. You must be able to recognize it, accept it and immediately begin to overcome it.

Difficulties and doubts will arise and these will affect different people in different ways. Try to adopt an air of quiet confidence and convince yourself that many other people have conquered the situation before and that you can too.

19. FIRST AID KIT

- Triangular bandage.
- Crepe bandage - 10 cms wide.
- Gauze squares - 5 cm x 5 cm x ½ dozen.
- Greasy dressing - tulle gras or sofratulle x 2.
- Bandaids.
- Elastoplast strip - 8 cm wide x ½ metre.
- Wound dressing - small.
- Needle.
- Scalpel blade.
- Small scissors.
- Small tweezers.
- Two safety pins.
- Antiseptic ointment.
- Paracetamol tablets x 10.
- Paracetamol tablets with codeine x 10.

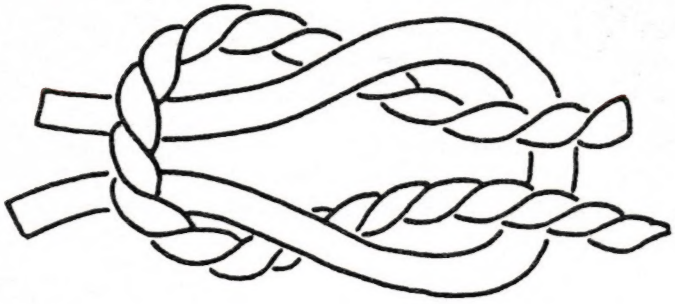
20. SURVIVAL KIT

The following is a suggested list of equipment that would be sufficient when used in conjunction with this booklet to provide you with the basic requirements for survival. A list of alternate uses for this equipment is also shown.

The size of the kit you make is very important, for if you make it too large you will tend to leave it in the car and not have it when you need it. Keep the quantities of each piece of equipment small enough to form a kit that you can carry easily.

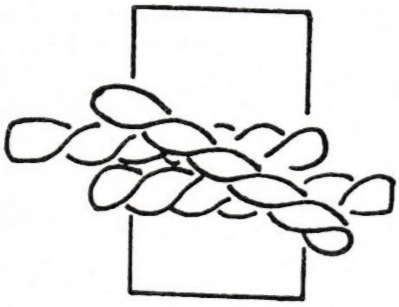
ITEM		USES
Sewing kit	-	Sutures, sewing, fishing.
Can opener	-	Manufacture of containers, etc.
Hacksaw blade	-	Cutting metal, bone, wire, etc.
Plastic bags	-	Ground sheets, raincoat, shelter, water collectors/carriers, carry bags, flotation.
Scalpel blade	-	As knife, general purpose.
Fishing net	-	Fishing net, carry bag.
Alfoil	-	Frying pan, water containers, signalling.
Surgical rubber	-	Slingshot, gidgie, long drinking straw, tourniquet.
Bush saw	-	Cutting saplings, bone, trip wire.
Canvas tape	-	Repairs to plastic bags, alfoil, clothing, bandaid.
Pencil and notepaper	-	Write diary each day, messages.
Prophylactic	-	Water container, flotation.
Nylon cord	-	Firelighting, snares, fishing, weapons.
Trace wire	-	Snares, fishing, etc.
Beef stock cubes	-	When morale needs a boost.
Kit containers	-	All purposes, cooking, distilling, digging, etc.
Rescue blanket	-	Tent, groundsheet, water procurement, sleeping bag, reflector sheet, signal mirror.
Vitamin tablets	-	To supplement food supplies.
Cigarette lighter	-	Firelighting.
Condy's Crystals	-	Medicinal, water purification, fire lighting.
Water purifying tablets	-	Water purification.
Fishing gear	-	Fishing, snares, weapons.

21. ELEMENTARY KNOTS

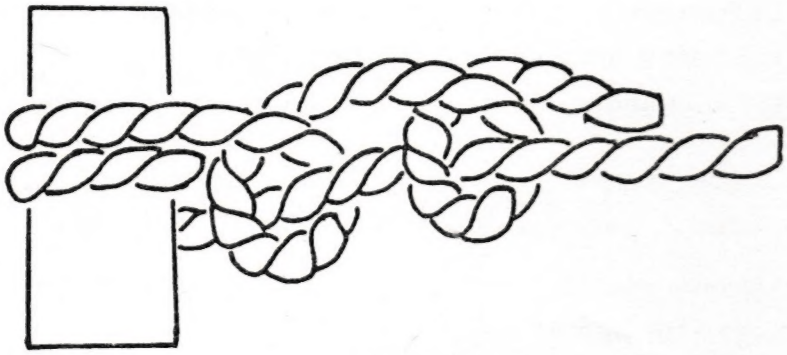


1. Reef Knot - used to join two ropes of equal, or approximately equal circumference.

2. Bowline - used to form a loop in a rope, it will not slip but is easy to undo.



3. Clove Hitch - used for tying a rope to a pole, good for beginning lashings.



4. Round Turn and Two Half Hitches - used for making a rope fast to an anchor point.

1ST CLASS
(Marsupials
and birds,
fish and fowl)

2ND CLASS
(Reptiles)

3RD CLASS
(Insects and the like,
native vegetation and fungi)

NOTE: The watch method and the shadow stick method as detailed in this booklet will not apply to areas north of the tropic of capricorn during midsummer.

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WORKING TOGETHER

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POLICE

TO SAVE LIVES